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TABLE OF CONTENTS.

	PAGE.
EDITORIAL ARTICLES:—The Preservation of Washington's Birthplace	1
The Origin of the Purple Beech	2
FOREIGN CORRESPONDENCE:—London Letter.....*W. Watson.*	3
NEW OR LITTLE-KNOWN PLANTS:—Fraxinus Bungeana. (With figure.)...*C. S. S.*	4
CULTURAL DEPARTMENT:—Field Mice and Bark Destruction.....*J. G. Jack.*	6
Seasonable Notes.....*W. H. Taplin.*	6
Hardy Plants on New Year's Day.....*J. N. Gerard.*	7
Winter Care of Trees, In the Shrubberies.....*R. A.*	7
CORRESPONDENCE:—Winter Notes from Missouri.....*Lora S. La Mance.*	7
Roses at the Waban Conservatories.....*T. D. Hatfield.*	8
The Catalpa for Forest-planting.....*Robert Douglas.*	8
RECENT PUBLICATIONS	9
NOTES	10
ILLUSTRATION:—Fraxinus Bungeana, Fig. 1	5

The Preservation of Washington's Birthplace.

SOME time ago the sum of $30,000 was appropriated by Congress for the purchase and preservation of Washington's birthplace. This, as too many Americans may not remember, is a plantation, now called Wakefield, in Westmoreland County, Virginia, bordering for about half a mile on the Potomac, and some sixty-five miles below the city of Washington. Here the first President's great-grandfather, grandfather and father spent most of their lives, and here his own childhood was passed. Nothing now remains of the plain square wooden house, which had only four rooms on its lower floor, excepting the brick foundations, even the chimney having fallen within recent years. The old family burying-ground is in a sadly neglected state, and the whole property, of about twelve hundred acres, is in an unattractive condition. Five thousand dollars were asked for it when Congress decided to purchase it; a landing-pier, making it accessible to the public, will cost some ten thousand more; and it is estimated that, after certain incidental expenses are likewise deducted, not more than thirteen thousand dollars will be left to be applied to desirable commemorative purposes. Commenting upon these facts, the *American Architect and Building News* recently said:

This sum would not go far in providing a monument, or other similar memorial, large enough not to look ridiculous in the middle of so extensive a tract, and, unless the appropriation could be considerably increased, we would suggest that an effective way of using the small sum available would be to spend it, under Mr. Olmsted's direction, in beautifying the plantation by purely natural means. The remains of the house and the family graves should be secured from further decay by proper shelter, but, beyond this, our idea is that the object in view should be to secure, using trees, shrubs and grass as the medium, the utmost possible effect of appropriate sentiment. So far as we know, such an experiment has never been tried on anything but a very small scale. In fact, there are very few men in the world who could handle trees and shrubs as a painter does his colors, with a knowledge of the effects produced on the mind by their combination, but Mr. Olmsted is one of them, and it is hardly too much to say that an entirely new field of art might be opened by such an essay. The circumstances would be particularly favorable. There is land enough to carry out an idea without having it spoiled by the intrusion of discordant neighboring objects; the Virginia atmosphere has naturally a tender haziness which lends itself to sentiment, and Mr. Olmsted knows the form, color, mode of growth, and, one may say, the expression, of every plant indigenous to that region. There would be no need of changing the topography, or in any way altering the general appearance of the plantation from what it was when Washington's childish eyes looked over it; everything would be done by planting, and a great deal of planting could be done with thirteen thousand dollars, with the additional advantage, that, when the time came for spending a hundred thousand or so on a more artificial memorial, what had already been done would be so much additional attraction to the place, while an insignificant monument would be only fit to be dug up and thrown away.

We are glad to reprint this advice, not only because it is the best which could be given with regard to the special case in view, but because it is a cheering proof that correct ideas as to the relation between monuments of any kind and their surroundings are rapidly gaining ground among members of the architectural profession, where, as we have often said before, their prevalence is especially desirable. It is also a renewed proof of the esteem in which the art of landscape-design is held by the best architects and of the growing spirit of cordiality and co-operation between the two professions.

THIS movement to preserve the birthplace of Washington suggests once more the necessity of general laws for securing and holding property which is worthy of reservation for public use. In this particular instance the Legislature of Virginia can pass an act enabling the General Government to acquire this tract of land in fee-simple, for, without the permission of the Government of a state, the Federal authorities cannot acquire land within its boundaries. But there are places in every state which ought to be preserved on account of their historic associations or their natural beauty, and yet in very few of them has any provision been made by law by which such places can be rescued from destruction. It was by special enactment that New Jersey acquired the beautiful old colonial mansion and grounds at Morristown, where Washington once had his headquarters, and in the same way Pennsylvania secured the camp-ground at Valley Forge. The example of Massachusetts cannot be too often commended for the act incorporating "Trustees of Public Reservations," which enables them to acquire by gift or purchase, and to hold forever, for public use, bits of impressive scenery or places identified with honored names or great deeds. There are public-spirited people all over the country who own beautiful tracts of land which they would be more than willing to have maintained in their original beauty if there was any body with the authority to hold them and the character to ensure a wise guardianship. We cannot too often insist on the value of contact with quiet rural beauty as a refreshment for the people who are crowding into cities in greater numbers every year. The acquisition of open spaces to which the thronging laborers in manufacturing towns can escape for a breath of fresh air and the enjoyment of the calm delights of natural scenery, is coming to be more and more a necessity every year, and while it is now admitted as a practical truth that the influence of such scenery is refreshing and uplifting, it must also be recognized as equally true that places which are rendered sacred by historic association make a direct appeal to our nobler impulses and generous passions, and in this way minister directly to the mental and moral health of the people.

We are apt to think that in the older civilization of Europe considerations like these have a wider and profounder sway. With a much longer history there are many more places in the old countries than in our own which

are hallowed by deeds of patriotic sacrifice; and with a denser population there is greater need there than there is here of free spaces for public enjoyment and a stronger motive for protecting beautiful natural objects from being vulgarized or destroyed. And yet a little more than a month ago it was found advisable in England to organize a movement to establish a "National Trust for Places of Historic Interest and Natural Beauty." The originators of this movement state that the nation is in danger of losing many of its most valuable possessions through the want of some custodian to whom they may be transferred and by whom they may be guarded. Districts celebrated for natural beauty are being marred and disfigured; houses and ruins of unique interest are destroyed because, as they pass from hand to hand, they sooner or later come into the ownership of persons who cannot appreciate them or who are forced to realize any money value they may have. Such noteworthy spots as the summit of Snowdon, the island in the middle of Grassmere Lake and the Ladore Falls have all come into market within the last two years, and they could have been secured for public enjoyment if there had been any body in existence capable of acquiring and protecting them in the public interest. The quarrying operations along the Cheddar Cliffs are defacing some of the grandest scenery in the country, and if money could be raised to purchase these cliffs for public use, there is not a corporate body to hold and manage such property in behalf of the public. To meet this condition of things this national trust is to be incorporated, and its primary function will be to accept from land-owners gifts of places which they desire to place beyond risk of injury from their successors, and to keep such places intact and at the service of the nation. The new society numbers among its organizers some of the best-known men in the kingdom, and its first work will be to accept the care of a beautiful sea-cliff from a Welsh land-owner, who is desirous of transferring it to them. This body will lose no time, we are assured, in "acquiring legal power and entering upon its duties," and it will carry with it the good wishes of all civilized people the world over who have a feeling for nature and for historic association.

It is to be sincerely hoped that every state in the union will pass an act with a purpose like that of the Massachusetts law incorporating the Trustees of Public Reservations, or begin some movement similar to that organized by the Duke of Westminster, Lord Dufferin, Lord Roseberry, Sir Frederick Leighton, Professor Huxley and other public-spirited men in Great Britain. Of course, there must be a controlling public sentiment behind any legislation such as is here recommended if it is to accomplish its highest purpose, but it is evident that this sentiment is gathering strength every year, and it will grow by exercise. It will not be satisfied by the selection of a few isolated tracts, but as it develops it will be manifested, as we have already said, "in a reverent regard for natural scenery over the entire face of the country. It will ensure, not only intelligent treatment for special reservations, but it will help to protect every pleasing prospect from being marred, and it will act as a sensitive public conscience to protest against the obliteration and defacement of natural beauty and the desecration of spots that are hallowed by historic memories, wherever they are found."

The Origin of the Purple Beech.

As all our readers probably know, the Purple or Copper-leaved Beech is not a distinct species, but a natural variety or sport from the common European Beech, as is shown by its botanical name—Fagus sylvatica, var. purpurea. The general belief among horticulturists has been that the first Beech with colored foliage was discovered in the last century in the Hainleiter Forest, near Sondershausen, in Thuringia, and to it all the many specimens which adorn the pleasure-grounds of Europe and America can trace back their origin. This belief was supported not long ago by Herr G. Lutze, of Sondershausen, in an article published in the Bulletin of the Thuringian Botanical Society, which declares that the historic tree still exists, is about 200 years old, and must be regarded as "the parent of all Purple Beeches." But Herr Lutze acknowledged that this belief contradicts the assertions of another writer, Aschershausen, who maintains that Purple Beeches are indigenous in southern Tyrol.

These contradictory affirmations are noted by Herr J. Jäggi, of Zurich, at the beginning of an article first published in the Swiss Journal of Horticulture, and thence copied into the pages of a recent number of *Gartenflora*. Herr Jäggi, who says that Aschershausen probably based his assertion upon Hausmann's Flora of the Tyrol (Innsbrück, 1851), quotes Hausmann's entry thus: "Fagus sylvatica, var. sanguinea: Common in the mountains around Roveredo," and says that the authorities he cites are Pollini, who died in 1831, and Cristofori, who died in 1848. And then Herr Jäggi proceeds to throw a clearer light upon the history of our familiar tree.

On page 268 of vol. i. of *Die Harbkesche wilde Baumzucht*, published at Brunswick in 1772, he tells us, Philippe Du Roi says: "A variety of the common Beech is Fagus sylvatica foliis atro-rubentibus (F. rubrifolia Buchensis, Ott, *Dendrologie*, 245). In Germany this variety is represented by several tall trees in the principality of Schwarzburg, whence it has been transported into cultivated grounds and gardens. . . . Ott met with it in the Canton Zurich, in a garden near the village of Buch, and named it from this circumstance." But, as Herr Jäggi then shows, Ott was here misquoted by Du Roi. What he had really said (page 245, *Dendrologie*, Zurich, 1763) was: "In Switzerland we have two varieties of the Beech: (1) Fagus foliis candidis, Scheuchz, *It. alp.*, vi., page 322; and (2) F. rubrifolia Buchensis, Wagner, *Helv. curios.*, page 266. The latter is found nowhere except near the village of Buch, on the Irchel mountain, in the Canton of Zurich, and there only in small numbers, and also in a garden to which it had thence been carried, retaining its purple color."

Following up this clue, Herr Jäggi then shows that "the Swiss Purple Beeches can by no means have been derived from the Thuringian tree, for we have certain witness to a group of native Swiss specimens which greatly antedated the supposed 'parent' at Sondershausen, and, indeed, must have long existed while this was still in its swaddling-clothes." Turning to the authority cited by Ott (*Wagner's Historia naturalis Helvetiæ curiosa, Tuguri*, 1680), he quotes the following sentence: "A Beech wood at Buch, on Irchel mountain, in Zurichgau (commonly called the Stammberg) contains three Beech-trees with red leaves, such as are nowhere else to be found."

Still more explicitly, we then learn, speaks Scheuzer, in his Description of the Natural History of Switzerland (*Beschreibung der Nature-Geschichten des Schweizerlandes*, Part I., Zurich, 1706), filling two quarto pages (pp. 2 and 3) with an article called "The Red Beech-trees of Buch."

"At Buch," this account runs, "a village lying in the Andelfinger estate, in the Canton Zurich, on the so-called Stammberg, there stand among other Beeches, Oaks and other forest-trees, three Beeches which differ from the sort commonly known in Europe in that they assume their colored garment early, at the beginning of summer; and, strange to say, at the holy Feast of Whitsuntide offer to our sight a marvelously beautiful red, so that the peasants dwelling within the limits of a two-hours' journey are accustomed then to assemble here to break off leaves and twigs from these blood-red Beeches and carry them home in their hats. The inhabitants explain that, in former times, five brothers murdered each other on this spot; and, as a righteous testimony from God, five blood-besprinkled Beech-trees sprang up, as a lasting witness to so horrible a deed. No one knows anything about the time when this murder-occurrence took place, nor about any other of the facts needful to establish the authenticity of the history. Nevertheless, it is certain that the peasants now living (1706) did not invent the fable, but inherited it as a tradition from their ancestors. And it is said that here and there in old herbaria notices of the Red Beeches of Buch may be found. For which reasons one is prompted to question whether perhaps the village of Buch itself may not have obtained its name from these rare trees."

The German for Beech, we may explain, is Buch. In Sulzer's edition of Scheuchzer (Zurich, 1746), a note appended to the term "blood-red" explains that the color is really a dark red; another note attached to the words last quoted says that the armorial shield of the village of Buch bears, in fact, a picture of a red Beech-tree; and a third tells us that at that time one or two of the red trees seemed to have perished, while, on the other hand, "new ones had followed in their places," this note reading as though the commentator had not himself investigated the matter.

The fables about these Beeches at Buch, continues Herr Jäggi, "are still current, with variations, in the village and its environs. We see," he then explains, "that in elder days probably five large Beeches of the sort existed; in Wagner's time (1680) there were still three; later, two more perished. Kölliker, according to his *Verzeichniss der Phanerogamischen Gewächse des Kantons Zürich*, published in 1839, saw one; and this still exists. It is not exactly of giant dimensions, and no young ones of the kind are now present." From all these facts Herr Jäggi concludes that the earliest certain historical notice of the existence of the Purple Beech is found in Wagner' *Historia*, 1680, and relates to the Purple Beeches at Buch, Switzerland, its witness, however, reaching much further back, through legends, old herbaria, the coat-of-arms of the village, etc.; that, as the famous existing Purple Beech at Sondershausen, in Thuringia, is about 200 years old (dating back, therefore, to just about the time when Wagner wrote), it is not impossible that it may have been propagated, by seed or cutting, from one of the trees at Buch, without any record having been preserved of the fact; that the Purple Beeches of Buch cannot have been derived from the Tyrol, where, very likely, the variety is indigenous, but must have originated on the spot; that, if the example at Sondershausen was derived, neither from the Tyrol, nor, which is also uncertain, from Buch, then Purple Beeches have evidently originated spontaneously in various places; and that this is the conclusion which seems to himself the most sensible. "In any case," he adds, "the questionable Thuringian tree is by no means the mother-tree of all the Purple Beeches in the world."

He does not deny, however, that it is the mother-tree probably of all, and certainly of almost all, those which now adorn the pleasure-grounds of Europe and America. It is the only authenticated source from which horticulturists have derived their stock. Naturally, the propagation of its offspring is usually effected by means of grafting, although, if a hundred seeds of a colored tree are sown, some of them are likely to produce plants like the parent, while from the others green Beeches of the normal kind will spring.

Foreign Correspondence.

London Letter.

THE last of the 1893 meetings of the Royal Horticultural Society was held on the 12th ult. For the time of year the exhibits were exceptionally numerous and interesting. There was a fine selection of Orchids, the following being the most noteworthy:

CYMBIDIUM TRACEYANUM.—This plant was introduced accidentally along with a batch of C. Lowianum and flowered for the first time in 1890 in the collection of Mr. A. H. Tracey, an Orchid dealer of Twickenham. It afterward became the property of Baron Schröder, who, I am informed on reliable authority, would not now take a thousand guineas for it. Only the one example of it is known, and this is now a splendid specimen. It flowers freely, having produced three very strong spikes this year. One of these was exhibited among a group of Orchids shown by Baron Schröder. It bore seventeen grand flowers, each fully five inches across, powerfully fragrant, the elegant sepals an inch wide and nearly four inches long, and the lip as large as that of C. grandiflorum (Hookerianum), to which C. Traceyanum is closely allied. The color of the sepals and petals is pale yellow, with streaks and dots of crimson, the lip being cream-yellow, with crimson spots on the reflexed front lobe, and crimson lines on the upright rounded lateral lobes. The large waxy-looking column is cream-white, with a purple tip. This is a magnificent Orchid, and, compared with some high-priced favorites, I should say it is quite worth the value put upon it by its owner.

CŒLOGYNE BARBATA.—A large specimen bearing twelve spikes, each eighteen inches long and bearing six or more flowers, came from Baron Schröder. The flowers are white, with a fimbriated lip colored snuff-brown. This is the largest specimen of this species I have ever seen.

CYPRIPEDIUMS.—Cypripedium Sanderæ and C. Sanderianum are two nearly allied forms of the common C. insigne, both having primrose-yellow flowers, without the green and brownish coloring of the type. That called Sanderæ is slightly larger and of a paler yellow color than the other, from which it also differs in having a few dots of dull red near the base of the white-bordered dorsal sepal. Examples of these also came from Baron Schröder's collection. A single plant of C. Sanderæ flowered among an imported lot of C. insigne about five years ago. Messrs. Sander cut the plant in two and sent one half to public auction, when Baron Schröder bought it for seventy-two guineas. Mr. Measures, of Streatham, secured the other half for one hundred guineas. The year following he cut it in two, selling one piece to his brother for one hundred guineas; next year he cut what remained into three, sold one portion for one hundred guineas, kept one and sold back the third to Messrs. Sander for twenty-five guineas. Baron Schröder's piece has never been mutilated. C. venustum, var. Measuresianum, is another variety which owes its value to the absence of all color, except yellow and green, from the flowers. A plant of it in flower was shown by Mr. R. D. Measures. C. fascinatum is a new hybrid between C. Spicerianum and C. hirsutissimum. A plant of it in flower was shown by Monsieur Jules Hye, of Ghent, and it easily obtained a first-class certificate on account of the size and attractive color of its flowers, which are as large as those of C. hirsutissimum, not unlike it in form and color, except the dorsal sepal, which is large and colored rose-purple, with a white margin and green spots at the base. C. Ceres, raised in 1891 by Mr. D. O. Drewilt from the same parents, is not nearly so fine a plant. C. Warnhamense, a hybrid between C. Curtisii and C. lævigatum, obtained an award of merit, as also did C. Wiganianum, a hybrid between C. Harrisianum and C. Ashburtonæ.

LÆLIA ANCEPS.—This species was represented by numerous varieties, some rare and every one beautiful. Messrs. F. Sander & Co. showed the following varieties: Oweniana, Sanderiana, Percivaliana and Barkeriana. From the same firm came a plant of the beautiful so-called natural hybrid L. Boothiana, with flowers of a rich rose-purple color. Another deviation from the usual run of autumn-flowering Lælias is one shown as L. Finckeniana, which obtained a first-class certificate. It is very near some of the white forms of L. anceps, but the flowers are small, white, with a blotch of purple on the front lobe. In my opinion there is as much confusion among these Mexican Lælias in consequence of the practice of naming every plant that varies slightly in color or form from a selected type, as there used to be in the Cattleyas of the labiata section before they were boldly tackled by Messrs. J. Veitch & Sons in their invaluable Orchid Manual.

NOVELTIES.—Chysis Oweni is a new species in the way of C. aurea, but the flowers are smaller and yellowish, tinged with rose-purple on the segments. Cyrtopodium virescens is new to cultivation, having been introduced from Brazil by Messrs. Sander & Co., who showed a plant of it bearing an erect spike two feet high, with a crowded raceme of elegant flowers each an inch across, with crisp segments, yellow, with brown spots, suggestive of Ansellia Africana. This distinct species is also now in flower at Kew. Lycaste Luciani was shown by L'Horticulture Internationale, Brussels. It has flowers as large as those of L. Skinneri, with dull flesh-colored sepals, whitish petals and a hairy lip, white, flushed with rose. L. Imschootiana is another new plant which was shown by the same firm. It also has large flowers, colored pale brown, with dull red dots, the lip yellow, with red spots. It obtained an award of merit. Cochlioda Noezliana, a spike bearing seventeen bright crimson flowers, and a spike of Cattleya labiata (Warocqueana) bearing six flowers also came from the Brussels nursery. The fame of this establishment for Odontoglossums was well sustained by two beautiful plants shown by them. They were both varieties of O. crispum—one called Thompsonæ carrying a spike of fifteen large full flowers, with three large spots on each segment; the other, called amplissimum, being equally good, but pure white. The former obtained an award of merit.

NEPENTHES.—Messrs. J. Veitch & Sons exhibited a group

of these plants, the most noteworthy being one called Amesiana, which is a seedling in the way of N. Chilsoni, but the pitchers are much larger. It obtained a first-class certificate. N. Wrigleyana superba, also shown as new, is very similar to one grown at Kew as N. Hookeræ. A most distinct and beautiful hybrid is N. mixta, which Messrs. Veitch raised from N. Northiana and N. Curtisii, also shown in splendid condition. The hybrid has longer pitchers than N. Curtisii, colored pale red-brown, with a rich mottling of deep purple. N. Dicksoniana and N. cincta were also represented by specimens with very large pitchers. The most striking of all, however, was a beautifully grown specimen of the extraordinary N. Barkei excellens, carrying nine big pitchers whose "tight waists" and rich coloration are peculiarly attractive.

The following plants were shown by Kew: Bomarea Patacoensis, a large cluster of flowers of rich orange-red color. This plant has been in flower since last March, and it has still numerous buds to open. Calpurnea aurea, the Natal Laburnum, an elegant tree from Natal, with all the appearance of the common Laburnum. It is grown in a cold greenhouse at Kew, where it flowers at various seasons. Manettia bicolor, a plant which I perceive is a favorite in America, but is scarcely known here notwithstanding its good nature under ordinary cultivation and its attractive numerous crimson and yellow flowers. Senecio macroglossus, the Cape Ivy, a beautiful greenhouse climber with Ivy-like leaves and golden-yellow leaves as large as Paris Daisies. Brownea Crawfordii, the magnificent hybrid of Irish origin, which is a glorious picture in winter in the Palm-house at Kew, where it produces numerous enormous heads of bright red flowers.

Chrysanthemums.—A large collection of cut flowers, many of them very fine, were shown by Mr. R. Owen, of Maidenhead. Among them were numerous unnamed or newly named English seedlings, some of which showed considerable promise. Mr. Owen is one of the leading growers and raisers of Chrysanthemums in England.

Lonicera Hildebrandiana.—The introduction of this extraordinary Honeysuckle by means of seeds sent from Burma, from which a batch of young plants has been raised at Kew, is decidedly good news. For its discovery we are indebted to General Collett, who found it in upper Burma about five years ago. He speaks of it as "a conspicuous shrub with large dark glossy leaves and fine crimson flowers seven inches long, and by far the largest of any known species of Honeysuckle." It is likely to require the same treatment as Rosa gigantea, which was also discovered by General Collett in the same region.

Incarvillea Delavayi.—In the *Revue Horticole*, for December, there is a colored figure of this plant, which has been introduced from China, and is, I believe, being distributed by a Continental nurseryman. To any one acquainted with the Indian Amphicome Emoidi, the resemblance to it of this new Incarvillea will, no doubt, occur. Whether, however, it is an Amphicome or an Incarvillea, it is certainly a beautiful plant as represented by the picture here mentioned. It grows less than a foot in height and has pinnate dark green leaves, like those of Tecoma grandiflora, and large erect racemes of rich red and yellow flowers as large as those of Gloxinias. I have lately seen specimens of another Incarvillea, also from China, with even larger flowers than those of I. Delavayi, which it resembles in habit. This has been named I. grandiflora by Mr. Hemsley. It is a plant which ought certainly to be secured for gardens.

The rose-colored Calla.—I referred to this plant a few weeks ago in consequence of a notice of it from Messrs. Krelage & Son, of Haarlem, with whom it had flowered. As I then anticipated, it proved to be Richardia Rehmanni, Mr. N. E. Brown having lately determined it from specimens supplied by Messrs. Krelage. This species is chiefly remarkable for its lanceolate instead of sagittate leaf-blades. The flower or spathe is as large as that of the dwarf variety of R. Œthiopica. At the last meeting of the Royal Horticultural Society a colored picture and letter from Mr. Medley Wood, of Natal, were communicated by the Director of Kew. From this it appears that there is a form of Richardia Rehmanni the spathes of which are four inches long and of a dull rose-purple color. The drawing had been prepared from a plant grown by Mr. Wood, to whom Kew is indebted for tubers which are likely to flower shortly.

London. *W. Watson.*

New or Little-known Plants.

Fraxinus Bungeana.

THIS is the north China representative of the Manna Ashes, so called because the manna of the Pharmacopœia is derived from one of the species, Fraxinus Ornus of southern Europe and Asia Minor. The Manna Ashes, which are also called Flowering Ashes, form a natural group, distinguished from the Ash-trees of our woods by the flowers, which are furnished with a white corolla deeply parted into two or four, or rarely into five or six, narrow divisions, and by the position of the inflorescence, which is produced at the end of a short leafy branch, or in the axil of a new leaf, while in our ordinary Ash-trees the flowers have no petals and the inflorescence is developed from a separate bud in the axil of one of the upper leaves of the previous year, or at the base of a young shoot.

Of the Flowering Ashes, three species are found within the territory of the United States. Fraxinus cuspidata and Fraxinus Greggii inhabit north-eastern Mexico and cross the Rio Grande into western Texas, the forms ranging through southern New Mexico to Arizona, and Fraxinus diptera in western California. None of them attain the size of trees in the United States, although in some parts of Mexico the Texas species are tree-like in habit. Fraxinus cuspidata is sometimes planted in the streets and plazas of the cities of Nuevo Leon, where, in early spring, when it is covered with its large clusters of pure white and very fragrant flowers, it is an attractive little tree well worth introducing into other countries with temperate climates. Fraxinus Greggii is very common on the limestone foothills of the Sierra Madre, where it often becomes twenty feet tall, and produces well-formed trunks (see the illustration on p. 451, vol. ii., of this journal), although north of the Rio Grande it is unusual to find it more than two or three feet high. The flowers of this species, which produces very small leaves, with wing-marginate stalks, are not known. It is probably not cultivated even in Mexico. In Europe and western Asia the group is represented by Fraxinus Ornus, a handsome small tree, which, unfortunately, is not hardy in our northern gardens; and in the Himalaya region by Fraxinus floribunda, a large and stately tree, the largest, perhaps, of the Manna Ashes, and a favorite shade-tree in many cities of northern India. But the largest number of species of these trees is found in western Asia, where there appear to be at least five or six, although some of them are still very imperfectly known.

Two of these Asiatic Manna Ashes are now well-established in the Arnold Arboretum—Fraxinus longicuspis, a small tree of northern Japan, which has not flowered here yet, and Fraxinus Bungeana, of which a figure from a drawing made by Mr. Faxon, in the Arboretum, appears on page 5 of this issue.

Fraxinus Bungeana,* as it appears in the Arboretum, is a shrub with slender, spreading, ashy gray stems three or four feet tall, slender, terete, dark gray branchlets marked by occasional pale lenticels, and stout, obtuse winter buds covered with dark puberulous scales. The leaves are two and a half to four inches long, with slender grooved

* Fraxinus Bungeana, De Candolle, *Prodr.*, viii., 275 (1844).—Maximowicz, *Prim. Fl. Amur.*, 474.—Hance, *Jour. Linn. Soc.*, xiii., 83.—Franchet, *Pl. David.* i., 203.—Wenzig, *Bot. Jarb.*, iv., 170.—Forbes & Hemsley, *Jour. Linn. Soc.*, xxvi., 84.
Fraxinus floribunda, Bunge, *Mém. Sav. Etr. St. Pétersbourg*, 135 (1834) (not Wallich).
Fraxinus obovata, Blume, *Mus. Bot. Lugd. Bat.*, i., 311 (1807).—Maximowicz, *Mél. Biol.*, ix., 396.—Franchet & Savatier, *Enum. Pl. Jap.*, ii., 434.
Fraxinus Ornus, var. Bungeana, Hance, *Jour. Bot.*, xiii., 133 in part (1875).

petioles which, while young, are furnished toward the base and at the insertion of the leaflets with tufts of thick orange-colored tomentum, and seven, or rarely five, leaflets; these are ovate or broadly obovate, narrowed at the apex into broad points, wedge-shaped at the base, and coarsely crenately serrate above the middle; they are thick and firm, or sometimes subcoriaceous, conspicuously reticulate venulose, dark green on the upper surface, pale and yellow-green on the lower surface, an inch to an inch and a half long, half an inch to three-quarters of an inch broad, and are raised on slender elongated petiolules. The flowers, which appear at the end of May, are borne on slender pedicels and are produced in compact panicles about two and a half inches long and broad; they are mostly perfect, or sometimes unisexual by the abortion of the stamens, and consist of a minute four-lobed calyx, persistent on the fruit, a white corolla a quarter of an inch long, and divided to the base into four linear-obovate petals, two stamens with elongated slender filaments and oblong anthers, and a narrow ovate ovary gradually contracted into a long slender style, divided at the apex into two stigmatic lobes. The fruit ripens in September, and is an inch long, with a short, slightly flattened, many-nerved body margined to about the middle by the decurrent base of the ovate wing, which

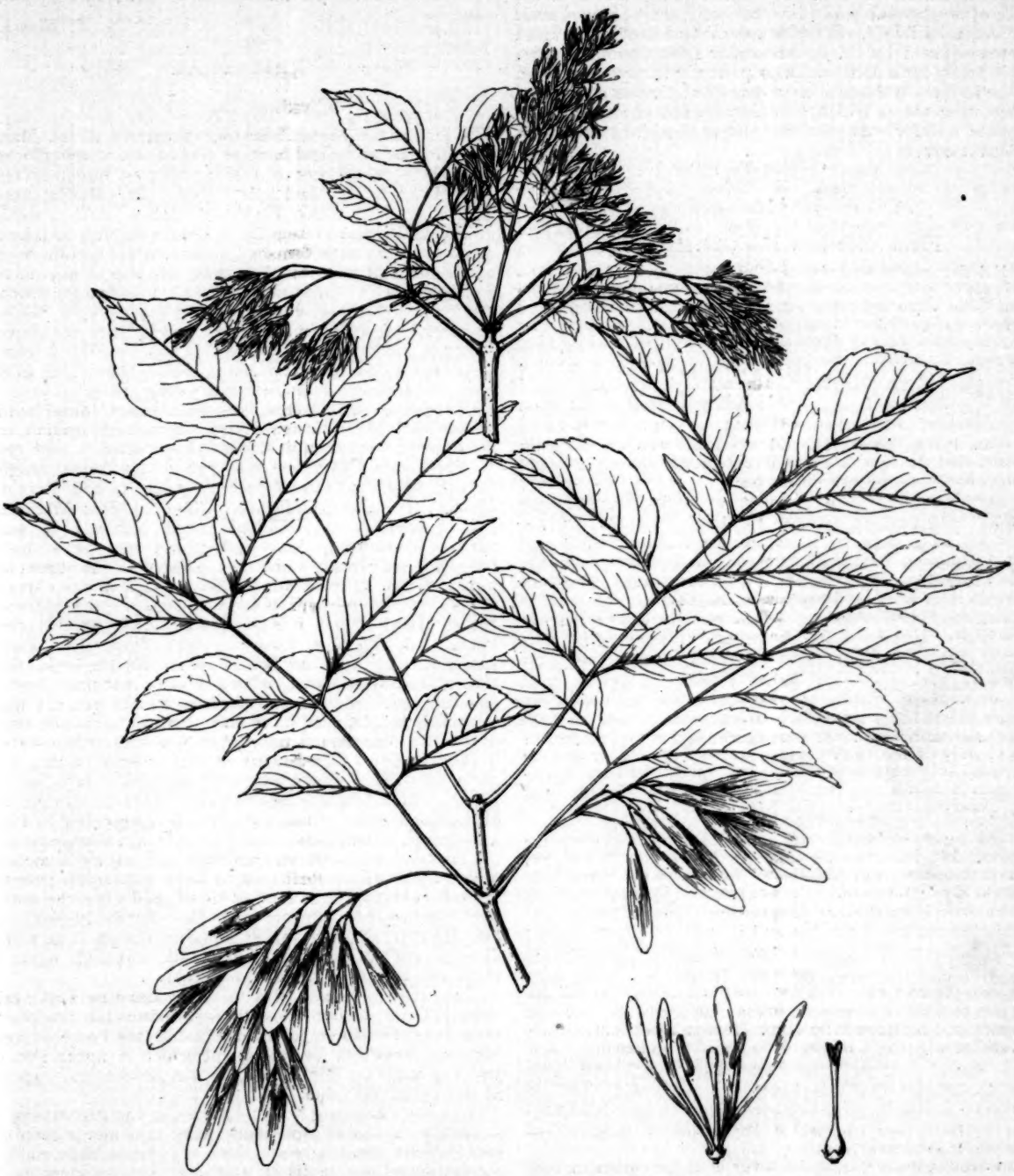

Fig. 78.—Fraxinus Bungeana.—See page 4.

is rounded or often emarginate and tipped at the apex with the remnants of the style, and marked on both sides by a broad conspicuous mid-nerve.

Fraxinus Bungeana was discovered by the German botanist whose name it bears, in 1831, during his overland journey from St. Petersburg to Peking, on the mountains near the Chinese capital. It is said to be common on the hills of northern China and in Mongolia, where it was found by the Abbé David. In the Arnold Arboretum it was raised from seed sent by Dr. Bretschneider from Peking in 1881. This pretty little Ash, which is perfectly hardy, deserves a place in our shrubberies as a representative of a group of interesting plants which generally do not succeed in this climate, and for the abundant clusters of white flowers with which it covers itself every year. *C. S. S.*

Cultural Department.

Field Mice and Bark Destruction.

THE depredations of mice in the young orchard or plantation of young trees are too often not realized until the damage is done, and repair, if possible, must be resorted to, instead of the simpler matter of prevention. It is rarely that mice injuriously affect trees in any other way than by girdling the stems by gnawing the bark, either partially or all around. If the removal of the bark is complete for the whole circumference of the trunk, the tree may put forth leaves and flowers again, possibly for more than one season, but it will eventually languish and perish when it should be in the prime of its growth. It is at this season, and during the winter and in early spring, that damage is to be apprehended, and the greatest danger lies in localities where the snows lie deepest. Where the ground is bare and open, kept free of grass and weeds and where snows do not long remain, there is much less liability to injury to the trees by small rodents.

Where snows cover the ground for a large part of the winter, and often for a considerable depth, mice are well protected from observation by their natural enemies and are enabled to carry on their work of injury without molestation and without exciting suspicion. As they burrow their way from one place to another, or from one tree to another, either along the surface of the ground between the soil and snow, or through the snow itself, it is an efficient and inexpensive preventive of injury to trample the snow until it is quite firm and compact about the plants. This is very quickly done and leaves the snow in a condition which mice find it impossible or inconvenient to work through. The greatest danger is to be feared in the vicinity of fences or hedges where snows drift and lie deepest. In such places the destruction of the bark sometimes extends from the ground to the lower branches of young Apple and other trees, especially as mice are liable to be most abundant about the boundaries of an orchard, as such boundaries are usually in such a condition as to be really a refuge for vermin. Where snows are not deep or permanent in winter, it is often necessary to furnish the trunks of small trees with some kind of protection. They are particularly liable to injury if growing in the vicinity of grass or herbage.

For such protection any material may be used which is unpalatable or impregnable to mice, and is not too expensive. Laths and pieces of boards and staves are effective if loosely bound around the trunks by string or wire, the lower ends resting upon or slightly inserted in the ground. These are sometimes left on all the year, but in other cases are removed in spring and replaced in autumn. Tarred paper is also used, but, unless very thick, it is liable to become broken down and inefficient. What is known as asbestos-paper has been found useful. This or the heavy tarred paper should be cut into strips which will reach a foot or more up the trunk of the tree, and wide enough so as to go around the stem and overlap at least an inch, and also leave half an inch of loose space between the bark and paper, which should not be bound tightly around the stems. The lower ends of the paper may rest on the ground, and the sheath can be held in place by a couple of strings. If there is plenty of room for growth allowed, the paper need not be removed, and it will last for several years. Painting the trunks with tar has been advised, but it is very doubtful whether this would not injure young trees, and, although painting with other substances may answer the purpose, they are not so reliable as is an actual barrier.

There seems to be no very efficient and economical method of trapping these field mice. The placing of poisoned grain and other food in the localities they are known to infest has been recommended. Among their natural enemies are the hawks, owls and weasels, and where these are plentiful the mice are kept within moderate numbers. Foxes, too, although mischievous in many respects, render aid to the farmer and fruit-grower by destroying vast numbers of field mice, and he who takes long and frequent walks over snow-covered fields and orchards in the country must have often noticed Reynard's tracks and, here and there, the holes in the snow where his sharp ears had located a mouse, which had been speedily dug up and carried off.

Arnold Arboretum. *J. G. Jack.*

Seasonable Notes.

REGULARITY in heating is essential at this season in the cultivation of many plants. But it should also be remembered that the temperature should not be kept too high, a mistake which forces into growth some species that should be resting now, while it helps to increase the numbers of obnoxious insects like the red spider, thrips and the various scale insects.

It is an excellent plan when building even a small conservatory to divide it into two apartments by a partition across the centre, and to have the heating apparatus under control by means of valves, so that different temperatures may be maintained in the two sections. A greater variety of plants can thus be cultivated, and flowering plants can be held back for future supply. Forced bulbs may also be hardened off as their flowers open, before they are ready for room decoration. In the cool section a few such gems as Daphne Indica, Eriostemon buxifolius and Erica hyemalis can be successfully grown. The limited space of many conservatories makes it impossible to adopt the same methods used in large commercial establishments, and it is necessary to grow some plants in pots that would otherwise be planted out in beds. Among these are Carnations and Bouvardias, both indispensable for a supply of winter flowers. After the first crop of bloom has been cut these plants will probably need some stimulant to induce a strong new growth, this treatment being especially necessary for Bouvardias, as they root freely and are gross feeders. If the space is needed for other purposes, the Bouvardia-plants may be discarded after the first flowering and the stock perpetuated by a panful of root-cuttings. It is better, however, to store away a few of these old plants under the benches, in readiness for outdoor planting next May, as an abundance of summer flowers can thus be obtained.

In the warm section of the conservatory, if it is specially devoted to foliage plants, the question of moisture will require attention now, as, with the strong fire-heat necessary during our northern winters, the atmosphere of a greenhouse loses its moisture very rapidly. Syringing is necessary on bright days, and this should be done during the warmth of the forenoon, and during dull weather will frequently have to be omitted altogether, but the necessary moisture can then be supplied by sprinkling the walks and under the benches morning and evening.

It is at this season that the red spider plays such havoc with foliage plants if once allowed to become established, and, consequently, the leaves of Dracænas, Dieffenbachias, Alocasias and others of like character should be examined frequently and washed with a soft sponge and a weak solution of whale-oil soap, for a little prevention pays better than a great deal of cure after the evil has become deep-seated. It will also be found that the plants noted above do not grow rapidly just now, and it is safer not to pot them for a couple of months. Less water at the root will, therefore, be required than during active growth. Although being mostly evergreen, these plants need more or less water through the whole year. Some of the Alocasias, notably A. Jenningsii and A. Marshallii, die down to the root, after the manner of Caladiums, and, consequently, cannot be considered among decorative plants for winter, but others of the same genus, like A. Sedenii, A. Veitchii and A. Sanderiana, retain most of their foliage until new growth begins in the spring.

Anthuriums are useful both for flowers and foliage, and though not essentially a winter-flowering species, yet their strange-looking spathes have such a lasting quality that the flowering season of A. Scherzerianum, A. Andreanum and their numerous offspring frequently extends through a considerable portion of the winter.

Perhaps the most useful of Orchids, Cypripedium insigne, will now be in flower, and the beauty of the blossoms will be continued much longer in a cool house if no water is allowed to lodge on the flowers. Shortly after the flowering season is

a good time to repot this Cypripedium, but if in a healthy condition it does not require potting oftener than once in two or three years, and I have kept plants in excellent condition in the same pans for six or seven years by applying a top-dressing each season.

Holmesburg, Pa. *W. H. Taplin.*

Hardy Plants on New Year's Day.

A LOOK over the outdoor garden at the commencement of a new year reveals much quiet activity among many plants, which can scarcely be said to be in a state of suspended animation, even during the hard weather. When out of the actual embrace of frost, as they often are here early in the year, every day shows some advances, and soon the annual procession of flowers will commence, with none more welcome than the cheerful heralds, the Snowdrops, the Anemones, the Crocuses and the Irises. The autumnal Snowdrops, which bridge over the winter season, have been a failure with me this year, and they seem to be of a rather tender constitution; probably the severity of midwinter prevents their ripening well as in their Grecian homes. The earlier Galanthuses are just commencing to peer out as the days lengthen. Crocus Imperati is simply biding its time for a little more sunlight in which to display its showy flowers. The Irises of the reticulata section are making spasmodic growth, with the first signs of bloom on some lately planted Iris Histrio. Anemone blanda, which grows strongly with me, usually awakens, as if with a sudden start, about this time, and there is no flower which gives us such pleasant greeting on a sunny day in winter as this starry gem. Of course, the Grape Hyacinths, the Spanish Irises and many other species of Iris still continue their growth begun in the fall, though they are flowers of the second season.

Of the California bulbs, so far, I have only noticed Calochortus venustus and C. zygadenus above ground. The Sedums make cheerful mats of color, especially valuable at this season, they being not at all affected by the cold. Some of the Thymes are also grateful, while one is glad to see good patches of Aubrietia and Arabis as an earnest of coming pleasure. Hybrid Primroses are the only ones of the family with which I have had success in the open. These are weather-proof, but are better for not being subjected to too many changes of freezing and thawing; at present they are dense rosettes of unharmed leaves. The best bit of color in the garden at present is a bush of Berberis (Mahonia) Aquifolium, whose glistening leaves now have a handsome bronzy tint; a few sprays of these, with some clusters of Rosa multiflora hips, make a seasonable bouquet, quiet and effective in a bright light.

Elizabeth, N. J. *F. N. Gerard.*

Winter Care of Trees.—There is no better time than the present to examine groves and groups of trees in order to determine whether they are becoming overcrowded, and to designate those which should be removed to make room for the rest. The axe is the only remedy for crowding among trees, and when this heroic treatment is necessary, no considerations of sentiment should be allowed to interfere with its use. At this season, too, it is easier to find where branches are growing too thickly on a tree, and where they are rubbing each other, than it is when they are in full foliage, and in the warm days of midwinter pruning can be done to advantage. When it is necessary to remove large branches they should be sawed close to the trunk and the edges cut smooth with a sharp knife. Coal-tar applied to the wound will keep out moisture and fungi, and thus prevent decay. Any kind of ochreous paint will answer almost as good a purpose, and it can be easily applied with an ordinary brush. All sprouts should be cut from the trunk and all suckers from its base, but the dead twigs in the heads of trees can be more easily detected in the summer. Of course, all diseased limbs should be amputated, and so should the branches of such trees as Hawthorns or Yellow-wood that are badly infested with scale. A top-dressing of loam or fine well-rotted stable-manure spread over the roots will encourage a vigorous growth next year. The dressing should be scattered over a circle as far as the roots extend.

In the Shrubberies.—Shrubs, too, must be well fed if they are expected to make luxuriant growth and show their highest beauty. No cultivator thinks of obtaining a fair crop in garden or field without fertilizing his land, and yet too many persons starve their shrubberies and then wonder why they are thin and unattractive. Of course, the shrubs like Corylopsis, Forsythia, Van Houtte's or Thunberg's Spiræa, Cercis, the bush Honeysuckles and other shrubs which flower early, should not now be cut in severely, since the buds for spring flowers are already formed, and if we cut away the branches we destroy the possibility of flowers next season. If late-flowering shrubs have not yet been pruned, the work can still be done, and this will encourage the growth of wood which will bear flowers later in the season. In this class are the Althæas, Hydrangea paniculata, Indian Tamarisk and others. The pruning of Roses which are liable to be killed back to some extent had better be postponed until spring, so that we can be sure to cut below the dead wood.

New Brunswick, N. J. *R. A.*

Correspondence.

Winter Notes from Missouri.

To the Editor of GARDEN AND FOREST:

Sir,—Nature, when left to herself, has beauty to show at every season. Autumn and winter have the sombre color of evergreens, the gleam of bright berries, and the soft gray tints of frost-touched seed-pods, which are as interesting in their way as the rich displays of flowers and foliage in spring and summer, and yet it is too much our custom to crowd our gardens with everything that can make the summer bright and leave the six months between the first and last frosts of the cold season void of every attraction. A winter garden need not be less pleasing than a garden in summer, although it may lack brilliancy of color and the beauties it presents are less evanescent and require less care to produce them.

With a milder climate than that of the northern states, the interval between the first frost of autumn and the last frost of spring extends here over fully five and a half months, while the violent fluctuations of temperature when the coldest months have warm September-like days, followed within thirty-six hours by a drop of the thermometer to zero or below, make the conditions almost as trying to vegetable life as those of much colder regions. Our winter gardening, therefore, has been confined to a display of evergreen foliage and of shrubs bearing bright fruit, together with an attempt to continue summer bloom into late autumn, and the use of as many hardy plants as possible with bright foliage and flowers in very early spring. We have found no difficulty in keeping up a show of Chrysanthemums, Tritomas, Verbenas, Dianthus, Sweet Alyssum and Calendulas until the last days of November, while Antirrhinum, Mexican Primrose, Cosmos, Feverfew and a dozen other well-known garden plants last until the beginning of November, and Pansies and Violets bloom in the open air until nearly Christmas. About the last of January or sometimes early in February, Pansies and Violets begin again with the Single Snowdrops and the earliest Crocuses. We have made no trial of the early Irises over which Mr. Gerard is so enthusiastic, but such commoner plants as the Scillas, Chionodoxas and Winter Aconite introduce the long train of beautiful and fragrant flowers of bulbous plants from Holland. Besides this, each year we add early-flowering herbaceous plants from the nurseries, and seek out our hardy native wildings and transfer them to our own grounds, so that the last six weeks which we win from the frost may be called the gala season of our garden.

We have not done much planting of evergreens for the dullest season, and yet we could hardly spare the traces of refreshing green which we already possess in our rockery fringed with evergreen Ferns, in the mound covered with the dark foliage of Vinca minor, the Myrtle of our grandmothers, and in the foliage of Junipers, Spruces, Arbor-vitæs and other conifers which add some warmth to the dull color of the landscape. In late autumn we have the purple and bronze leaves of the Barberries and Forsythias, while vines of Physianthus, Honeysuckle and Clematis retain their colors into late November, with the Passion-vine (Constance Elliott) and Solanum jasminoides richly green well into December, and often into January. The leaves of some species of our native Smilax turn to a beautiful bronzy red, and persist until midwinter, so that we can, if we will, have late autumn foliage here from deciduous shrubs and vines alone. GARDEN AND FOREST has so often spoken of shrubs with showy fruit that there is no need of enlargement upon that point further than to say that no shrubbery where the berries of Ilex and Evonymus, of Alder, Celastrus and Berberis have a home can be chilled into common-place by frost and cold.

It should be remembered that while certain evergreens and plants with ornamental fruit will show their best qualities wherever they may be situated, it is a different matter with the plants which flower late or those with late-persisting leaves. They must be planted where they will be sheltered from the

north, against early and severe freezing, and from the east, where the early sun, shining brightly on wood and leaf still frozen, soon destroys them. It is only by favoring our plants in every possible way, by planting them on the sheltered sides of shrubberies, under the lee of buildings and at the foot of walls, that we can have their beauty in the dull season; and then the roots must be mulched to prevent rapid alternation of freezing and thawing. I have seen plants in full leaf when they stood in a sheltered nook, while others of the same species on the open lawn had been stripped six weeks before. These are matters which it pays to remember at planting-time.

Pineville, Mo. *Lora S. La Mance.*

Roses at the Waban Conservatories.

To the Editor of Garden and Forest:

Sir,—Other flowers have their periods of popularity, but the Rose is always queen, and of this I was lately reminded by a visit to the Waban Rose Conservatories at Natick, Massachusetts. The season has been a favorable one for Roses ever since June; the autumn, especially, has been bright and clear, to insure a good sturdy growth, conducive to free blooming later on. The houses set apart for Tea Roses were carrying an immense crop of bloom, held back, no doubt, for the Christmas holidays.

Madame Cusin, a lovely French Tea Rose, introduced in 1881, and for a long time popular in New York, is gaining in favor here. It is rather variable, but when seen in its true character is most beautiful. The color is very deep rose, with violet and yellow shadings, and it is very fragrant. Its chief uses are for bouquets and for evening wear, as it shows well under artificial light. Kaiserin Augusta Victoria, a comparatively new hybrid Tea, is considered by many the coming white Rose for forcing. It certainly is very beautiful, a full double, free-blooming, creamy-white flower, with a most delicious odor resembling that of the Magnolia, and, according to some, that of the Primrose, as others perceive it. For private gardens it will prove a decided acquisition, but it is yet questionable whether for commercial purposes it will supersede the Bride, as it seems to lack the continuous blooming qualities of that well-known variety.

Catherine Mermet is still considered the best rose of its color. It certainly is a most profitable one. Its elegant shape and lovely flesh-pink color bring it as near perfection as possible. Successful cultivation depends more on good, healthy stock, and suitable conditions as to temperature, air, careful watering, and the judicious application of stimulants than on the quality of the soil. The Bride is a white sport, now well known, originating with Mr. John N. May, of Summit, New Jersey, and sent out by him in 1885. Waban, a deep rose-colored sport of nearly uniform color, originated with E. M. Wood, of Natick, and was sent out by him in 1891. It is a most beautiful variety, but from a generally unsolved difficulty in meeting with its peculiar requirements, especially in the prevention of the development of a green centre, it has not become as generally grown as it promised to be. Bridesmaid is a still more recent sport, originating with Mr. F. L. Moore, of Chatham, New Jersey, and sent out by him in 1892. It is a beautiful clear pink, of nearly uniform color, having all the good qualities of its parent. It was predicted that it would displace the older variety; however, it now seems that there is a place for both. Madame Caroline Testout is a most attractive and pleasing reddish-pink hybrid Tea, of good clear growth and free-blooming qualities. It is more suitable for private gardens than for commercial use, as being a poor keeper it is not always a profitable investment for the dealers.

Several houses of hybrid perpetual Roses are started for Easter flowers. For earliest forcing, Magna Charta and Heinrich Schultheis, both of delicate pink shades, are the leading varieties. To give an instance of the varying adaptability of different varieties for forcing, it may be noted that Baroness Rothschild, started at the same time, will not be in bloom for nearly a month later.

Suisaine Marie de Rodocanachi is a new hybrid perpetual, related, if one may judge from the manner of its growth, to Ulrich Brunner, and said to be one or two shades deeper in color, which is a most intense scarlet-crimson. Like Meteor, the popular crimson hybrid Tea, it was nearly lost to cultivation, its merits being accidentally discovered among an otherwise worthless lot of varieties. All the varieties for earliest forcing are grown in pots, and many of the plants have been forced several seasons. After blooming, all the next season's growth is made in the greenhouses and afterward ripened outdoors. Many growers fail with pot Roses because they put them out-of-doors to make their next season's wood.

Wellesley, Mass. *T. D. Hatfield.*

The Catalpa for Forest-planting.

To the Editor of Garden and Forest:

Sir,—I was much interested in the letter of your Kansas correspondent and the accompanying editorial note relating to the planting of the Catalpa in that state, and published in the issue of Garden and Forest for December 20th. I can confirm all that he says about the durability of Catalpa-wood and its value for cabinet-work. It is a misfortune, however, that he should have accepted as true the statement which he says was prevalent ten years ago to the effect that "Catalpas planted four feet apart each way, and cultivated three or four years, would every one make a post in from eight to ten years." Perhaps such statements did appear in the agricultural press, but surely no one who has observed the growth of trees, either in the forest or in artificial plantations, would have believed this possible. It is very easy to assume that if a tree will make a certain growth under peculiarly advantageous conditions, we can therefore assume that any and every other tree of the same species will always make an equal growth.

It is only on paper that men plant forests which grow in this prosperous way. "Set out your trees four feet apart," says the indoor forester, "then the third year thin out every alternate tree in the first row, and take the second row entirely, and you will have trees standing eight feet apart, exactly one-fourth of the number originally planted, all vigorous and happy, and growing into timber at railroad speed." But if any plantation was ever actually thinned out in this geometrical fashion I am sure it must have been seriously damaged. If the same kinds of trees would always grow uniformly in size and habit much labor would be saved to the tree-grower. As it is now, he has to assort his seedlings into several sizes from the seed-bed, then he plants each size in nursery-rows. At the end of three years he assorts them in sizes and plants again, and then he selects several sizes. After that he assorts them again so as to make collections of uniform size, and when they are planted out permanently they still refuse to keep even with each other. Now, in forest-planting, the seedlings which are set four feet apart each way are from ten to fifteen inches high, with a stem about as large as a lead-pencil. At the end of two seasons some will be five or six feet high, others two or three feet high. Of course, the smaller ones will be overshadowed in less than eight or ten years, but they should be left on the ground, as they assist in shading it, and die for the lack of light when the taller trees overtop them.

Your correspondent's plan of growing fence-posts by planting rows twelve to fifteen feet apart and five to six feet apart in the rows would be altogether too expensive. In planting corn, three rows could be grown between his rows of trees the first year, and if the trees were pruned three rows might be grown the second, but only two rows could be planted the third year, and as the corn could only be cultivated one way it would have to be hoed or hand-weeded, and the cost would be enormous, and he never would plant three or four crops of potatoes after three years of corn. If a farmer needs posts for use on his farm only, and does not intend to raise them for sale, the better way would be to plant a narrow belt of trees along the north and west lines of his farm. The outside row could be used as living posts, for a strip of board could be tacked to the body of a tree and two or three wires fastened to this. If a farmer preferred, he might plant a grove for shelter and could enjoy himself in the shade by thinning out the trees for posts as they crowded each other. In this case the trees should be planted equidistant, for he could get more post-lengths from his trees than if planted five or six feet apart and in rows fifteen feet apart. Under the latter system the trees would naturally lean more or less to the right and left of the row to get to the light, while if planted at equal distances both ways they would struggle upward, and make long straight trunks.

An essential point in forest-tree planting is to have the surface of the ground shaded as quickly as possible. It has been already explained in your columns that I have taken contracts to plant by the acre at four feet apart each way, and care for the trees until they reach five or six feet in height and shade the ground, that is, until they need no further care until they are thinned out. Now I could not have made this contract at the same price if the trees had been planted eight feet by eight and cultivated until they shaded the ground, although only one-fourth as many trees would have been required. The extra number of trees costs nothing compared with the years of cultivation, and especially with the expense of pruning.

It would cost more to prune a thousand trees if only three cuts were to be made to the tree than it would cost to plant five thousand trees. All this I have learned by experience in Kansas.

Your correspondent compares the growth of the tree at the ground with the growth of those planted closely, but he does not seem to consider that the closely set trees attain twice the height of his cultivated and fertilized tree in ten years, and hold their diameter well up while his own tree tapers quickly toward the top. I have had little experience in thinning out young forest plantations. When I delivered a plantation in Kansas it was my advice to leave it alone for eight or ten years, except to plow roads around every forty acres which were left sixteen feet wide for fire-breaks. I went through one large plantation, which had stood ten years in 1891, with the superintendent, and we adopted a rule that every tree whose leader was overshadowed by adjoining trees should be cut down. I spent two days with some handy workmen marking the trees to be cut out and explaining to them my method, and I estimated that at that time the thinning would cost seventy cents an acre. It was actually done for a little less. We might have thinned the woods by taking out the heaviest trees for posts, but this would have been vandalism. We left the thriftiest to grow, to the number of about fourteen hundred to the acre.

Mannville, Fla. *Robert Douglas.*

Recent Publications.

Customs and Fashions in Old New England. By Alice Morse Earle. Charles Scribner's Sons. 1893.

Appealing chiefly to students of history and of human nature, Mrs. Earle's book, nevertheless, contains much that is specially interesting to the lovers of what we may call plant-history. This is particularly true of the chapters entitled "Supplies of the Larder," "Old Colonial Drinks and Drinkers," and "Doctors and Patients." In the first-named a good deal of space is naturally given to Indian corn and the various forms in which it was prepared for eating; but this, as well as the biography of the pumpkin, then generally called the pompion, is more or less familiar to most Americans. Fresher is the information that squashes were called by such cumbersome names as squontersquoshes and askutasquashes, and that Governor Winthrop was so impressed by the sight of popping corn that he carefully wrote of the way in which it "turns inside out." Who has not wondered why corn-bread is often called Johnny-cake? Here we read that it was first dubbed jonne-cake, or journey-cake, because it was an excellent article with which to fill the traveler's knapsack. Potatoes, says Mrs. Earle, "were on the list of seeds, fruits and vegetables that were furnished to the Massachusetts Bay colonists in 1628, and fifteen tons (which were probably sweet-potatoes) were imported from Bermuda in 1636 and sold in Boston at twopence the pound. Winthrop wrote of 'potatose' in 1683. Their cultivation was rare. There is a tradition that the Irish settlers at Londonderry, New Hampshire, began the first systematic planting of Potatoes. At the Harvard Commencement dinner in 1708 potatoes were on the list of supplies. A crop of eight bushels which one Hadley farmer raised in 1763 was large—too large, since 'if a man ate them every day he could not live beyond seven years.' Indeed, the 'gallant root of potatoes' was regarded as a sort of forbidden fruit—a root more than suspected of being an overactive aphrodisiac, and withal so wholly abandoned as not to have been mentioned in the Bible; and when Parson Jonathan Hubbard, of Sheffield, raised twenty bushels in one year, it is said he came very near being dealt with by his church for his wicked hardihood. In more than one town the settlers fancied the balls were the edible portion, and 'did not much desire them.' . . . Other vegetables were produced in New England in abundance. Higginson speaks of green peas, turnips, parsnips, carrots and cucumbers, and a dozen fruits and berries. Cranberries were plentiful, and soon were exported to England. Josselyn gives a very full list of fruits and vegetables and pot-herbs, including beans, which were baked by the Indians in earthen pots, as they now are in Boston bake-shops. . . . By Johnson's time New Englanders had 'apple, pear and quince tarts instead of their former pumpkin pies.' . . . Josselyn said the 'quinces, cherries and damsins set the dames a-work. Marmalet and preserved damsins were to be met with in every house.' Skill in preserving was ever an English woman's pride, and New-English women did not forget the lesson they had learned in their 'faire English homes.' They made preserves and conserves, marmalets and quiddonies, hypocras and household wines, usquebarbs and cordials. They candied fruits and made syrups. They preserved everything that could bear preserving. I have seen old-time receipts for preserving quinces, 'respasse,' pippins, 'apricocks,' plums, 'damsins,' peaches, oranges, lemons, artichokes, green walnuts, elecampane-roots, eringo-roots, grapes, barberries, cherries; receipts for syrup of clove, gilliflower, wormwood, mint, aniseed, elder, lemons, marigolds, citron, hyssop, liquorice; receipts for conserves of roses, violets, borage-flowers, rosemary, betony, sage, mint, lavender, marjoram and 'piony'; rules for candying fruit, berries and flowers, for poppy-water, cordial, cherry-water, lemon-water, thyme-water, Angelica-water, Aqua mirabilis, Aqua Coelestis, clary-water, mint-water. No wonder a profession of preserving sprung up."

Cider, we are told, "was made at first by pounding the apples by hand in wooden mortars; sometimes the pomace was pressed in baskets. Rude mills were then formed with a hollow log, and a heavy weight or maul on a spring-board. Cider soon became the common drink of the people, and it was made in vast quantities. In 1671 five hundred hogsheads were made of one orchard's produce. One village of forty families made three thousand barrels in 1721. . . . It was freely used even by the children at breakfast, as well as at dinner, up to the first quarter of the present century, when many zealous followers so eagerly embraced the new temperance reform that they cut down whole orchards of thriving Apple-trees, conceiving no possibility of the general use of the fruit for food instead of drink." Spruce and birch beer, says Mrs. Earle, were brewed by mixing a decoction of sassafras, birch or spruce bark with molasses and water, or by boiling the twigs in maple-sap, or by boiling together pumpkin and apple-parings, water, malt and roots.

Tea was a rarity until after the opening of the eighteenth century. Some queer mistakes were made in early days "through the employment of the herb as food," the liquor being thrown away after boiling and the leaves eaten with butter and salt. Some called the "new China drink" "rank poison, far-fetched and dear-bought," while others ascribed much virtue to its use. When the dawning Revolution excited the minds of colonial dames against it, many native substitutes were tried, "the most esteemed being Liberty tea, which was thus made: "The four-leaved loose-strife was pulled up like flax, its stalks were stripped of leaves and boiled; the leaves were put in an iron kettle and basted with the liquor from the stalks. Then the leaves were put in an oven and dried. Liberty tea sold for sixpence a pound. Ribwort was also used to make a so-called tea—Strawberry and Currant leaves, sage, and even strong medicinal herbs likewise. Hyperion tea was made from Raspberry leaves." But when, to explain its nature, Mrs. Earle cites a contemporary writer as saying that Hyperion and Labrador teas are the same, we feel she must be mistaken, and that the beverage in question was manufactured from Ledum latifolium, that familiar plant of the Heath family whose common name is still Labrador Tea; especially as her authority goes on to say: "The virtues of the plant or shrub from which this delicate tea is gathered were first discovered by the aborigines, and from them the Canadians learned them. Before the cession of Canada to Great Britain we knew little or nothing of this most excellent herb, but since that we have been taught to find it growing all over hill and dale between latitude forty and sixty. It is found all over New England in great plenty, and that of best quality, particularly on the banks of the Penobscot, Kennebeck, Nichewannock and Merrimac."

The demands of the toilet were met by Colonial dames in painstaking, artificial ways which would seem frivolous, indeed, to their supposedly more frivolous descendants of to-day. Pomades, cosmetics, face-washes, hair-dyes, tooth-powders, and especially perfumes, were very largely manufactured in Puritan households, and stills, retorts and mills for the making of perfumes, oils and "beauty-waters" were almost as common as looms and spinning-wheels. Much time was spent in planting suitable materials in the garden, and in gathering them there and in the woods and fields; and "in every garret, from every rafter, slowly swayed great susurrous bunches of withered herbs and simples, awaiting expression and distillation. . . . In many an old garret, now bare of such stores, 'mints still perfume the air'; the very walls exhale 'the homesick smell of dry, forgotten herbs.'"

But the still-room was used likewise for the preparation of medicines, and quaint and curious is the catalogue Mrs. Earle gives of the partly vegetable, partly animal and partly mineral remedies used in colonial times. But we need not dwell now upon her chapter entitled "Doctors and Patients," for we noticed it at some length when it first appeared, under the title, "The Queen's Closet Opened," in the *Atlantic Monthly*. In closing Mrs. Earle's delightful, gossipy, yet in many ways seriously instructive volume, one wishes only that she had told us something of our far-off grandmothers' gardens as well as of their home-interiors.

Notes.

The last English census enumerated about 5,000 women who are professional gardeners in that country, and six who are employed in superintending the drainage of towns.

A statistical summary with regard to the rate of growth of different species of trees, as observed in the Pinetum at Schovenhorst, in Holland, has recently been published. The measurements were made in the years 1878, 1886 and 1892, and deal with 200 specimens. The tree which showed the most rapid increase of size was Abies grandis. At three feet four inches above the ground it was twenty-two inches in circumference in 1878, forty-four inches in 1886, and sixty-nine inches in 1892, while its height was noted as twenty-one feet four inches in 1878, thirty-five feet three inches in 1886, and fifty feet in 1892.

The forestry exhibit of the state of Pennsylvania at the World's Fair has just been deposited at the State College in Centre County. Fortunately, the large sections of tree-trunks have not been damaged beyond the loss of small pieces of bark and a few bruises on the oil surfaces. The large photographs in swinging frames make an interesting and beautiful series. Among the trunk specimens is one of Sassafras, twenty-six inches in diameter, and showing 107 rings of annual growth, and another of a White Pine, thirty-eight inches in diameter, showing 288 rings. Pennsylvania cannot boast of many trees of similar dimensions in her forests to-day.

Le Comte Oswald de Kerchove de Denterghem, the distinguished Belgian horticulturist, and the author of a work on *Les Palmiers*, is about to issue *le Livre des Orchidées*, an octavo volume, with thirty colored plates and more than two hundred figures. The work will be divided into five divisions and will embrace the history of Orchids, their morphology, their geographical distribution, their uses and their cultivation, the last part being devoted to a review of each of the genera cultivated in European gardens, with descriptions of the most valuable species. The volume may be obtained from the publisher, A. D. Hoste, Rue des Champs 47, Ghent, Belgium. The price is thirty francs.

The use of wire netting for tree-guards originated, we believe, with the Commission in charge of tree-planting in Washington. It has been largely adopted elsewhere, not only because it is cheap, but because it is proving most effective. How complete this protection is can be plainly seen by one who rides through certain streets in Washington, where the trees were originally planted twice as close as they should have been. Since every other tree is to be removed when it begins to interfere with its neighbors, these guards have only been placed on the trees that are to remain, and in a recent examination of a row of trees a mile long and treated in this way there was hardly a visible defacement on a single trunk which had been surrounded by the wire screens, although the meshes were two inches in diameter, while the unprotected trees were almost invariably badly injured, and some of them completely barked on the street side from the ground to a point as high as a horse's teeth could reach.

A recent account of the celebrated botanical garden of Buitenzorg, in Java, published by Dr. Haberlandt, of Vienna, speaks with especial praise of the avenues, each composed of trees of a single kind, which divide the garden into sections. One of these is composed of 160 fine specimens of Canarium commune, the thick crowns of which form a gigantic arcade, where all interstices are filled by the deep green of thousands of Aroids; another is formed of Livistonias, with colossal equal trunks and fan-like crowns ornamented by numberless scarlet fruit-stalks; and a third by Ficus Benjamina, whose multiplied trunks and broad expanses of foliage give the look rather of a long-extended wood than of a simple avenue.

Messrs. Frost & Co., of the Genesee Valley Nurseries, in Rochester, write that they received last autumn the following communication from a leading nursery firm in Orleans, France: "Some years since we sent you a plant named Polygonum Sachalinense. Have you the plant still? If so, would you be so kind as to dig up all the roots, even if you can get thousands of them, cutting them into lengths of four to six inches, and forward them to us by the first steamer? We will pay you for them, besides your labor, trouble and expense." Messrs. Frost & Co. forwarded a large number of roots by the next steamer. It will be remembered that in our issue for the 20th of September last we called attention to the fact that this Knot-weed was being recommended in several European journals as a forage-plant, and, no doubt, the roots sent by Messrs. Frost & Co. will be used to ensure a forage-supply in regions where nothing better will grow. The Polygonums belong to the same family as Buckwheat and Rhubarb, and it is said that when the rhizomes of this species are divided and set a yard apart the surface of the soil will be completely covered in a year or two with abundant forage.

During holiday week fairly good flowers could be bought on the street for almost nothing, although to those who are able to pass discriminative judgment they were neither fresh nor anywhere near the first quality, and prices for choice flowers at the first-class florists were not by any means extravagant. While it was to be expected that retrenchment in every household would begin on the flower-supply, the fact is, that instead of giving costly presents of jewelry or bric-à-brac, flowers, which are always fashionable, have taken the place of these, so that the quantity of cut flowers sold during the holiday season was larger than it was last year, the prices being considerably lower. Of course, there was an abundance of roses, with a wide range of prices, from fifteen cents for dainty buds of Papa Gontier to two dollars apiece for American Beauty roses, with stems three and four feet long. Violets continue to be the most fashionable of small flowers, and bunches of a hundred double deep-colored flowers were three dollars. The best carnations sold for seventy-five cents a dozen, Storm King, the favorite among white sorts for its large size and strong stems, commanding a dollar a dozen. Large and showy Prince of Orange marigolds were in limited supply at a dollar a dozen, and flowers of Lilium Harrisii, popular for decorative use at weddings, brought two to three dollars a dozen. There was a suggestion of spring in the first forced daffodils and tulips, the latter costing seventy-five cents to a dollar a dozen, and the narcissus twenty-five cents a dozen. Orchids naturally made the richest and most imposing show in the windows of the uptown florists, where they were displayed in great profusion. Flowers of Cattleya Trianæ, costing from fifty cents to a dollar each, and of Cypripedium insigne, which varied in price from two to five dollars a dozen, were most frequently seen, and, oddly enough, large and well-grown flowers of Cyclamen were often sold with the Orchids, and even passed under that name among some uninstructed buyers. These cost fifty cents a dozen. Baskets of two or three kinds of flowers, exquisitely arranged with Ferns, were most generally used for floral holiday gifts. In the construction of a bridal bouquet so many spikes of Lily-of-the-valley and forced white Lilacs are used that twenty-five dollars is a fair price for one, and the same amount will buy a dozen sprays of Phalænopsis, which are used for the same purpose. Plants sold for New Year's festivities, besides Palms, included well-berried specimens of Ardisia, various Heaths in flower, the Jerusalem Cherry, Azaleas and small Lilac-plants in bloom.